Movement is Medicine: Infant Developmental Movement

Susan Milani, DO
AAO Convocation 2020
Objectives

1. Identify infant movement pertaining to spinal, homologous, homolateral and contralateral developmental movement patterns.


3. Identify and experience developmental movement patterns in your own movement.

4. Practice the sfacilitation of developmental movement patterns that can be applied to your patients (adult or infant).
How is Infant Motor Development Viewed?
Developmental Milestones

FIGURE 1 | Typical example of milestone chart illustrating age-related changes in postural development. (Reprinted with permission from Ref 4. Copyright 2010 Taylor and Francis)
Weakness, inflexibility, and lack of coordination are often not due to structural or muscular problems, but caused by lack of process. When that process is actualized, we experience strength, flexibility, and ease in our movement. The Basic Neurocellular Patterns are an exploration of process.

Bonnie Bainbridge Cohen
Bonnie Bainbridge Cohen

- A movement artist, dancer, researcher, educator, occupational therapist.
- In 1973, founded the School for Body-Mind Centering, an approach to movement and consciousness
- Over 60 years of work influencing dance, bodywork, yoga, psychotherapy, infant and child development
Introduction to Development Movement Patterns/
Basic Neurocellular Patterns

Prevertebrate Patterns

Vertebrate Patterns
Overview
Vertebrate Patterns

- Spinal
- Homologous
- Homolateral
- Contralateral

- Yield and Push
- Reach and Pull
Spinal

- Base for development of limb patterns
- Movement is initiated by the spine
- Yield and Push pattern
- Reach and Pull pattern

Reprinted with permission from B. Bainbridge Cohen *Basic Neurocellular Patterns*
Spinal-Yield and Push for the Tail and Head

Reprinted with permission from B. Bainbridge Cohen *Basic Neurocellular Patterns*
Spinal Reach and Pull from the Head and Tail

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Homologous-Yield and Push

- Two-limbed (two upper and two lower)
- Establish symmetry
- Midline orientation
- Broad base of support

Reprinted with permission from B. Bainbridge Cohen *Basic Neurocellular Patterns*
Homologous-Yield and Push

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Homologous- Reach and Pull

Reprinted with permission from B. Bainbridge Cohen *Basic Neurocellular Patterns*
Homolateral-Yield and Push

- Upper and lower limbs on the same side
- Establishes right and left sides
- Belly crawling
- Yield and Push pattern

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Homolateral-Yield and Push

Reprinted with permission from B. Bainbridge Cohen *Basic Neurocellular Patterns*
Contralateral-Reach and Pull

- Upper and lower limbs on opposite sides
- Establishes diagonal integration of limbs
- Three-dimensional orientation
- Crawling on hands and knees
- Reach and Pull pattern

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Integration of Movement Patterns
Infant
Integration of Movement Patterns
Adult
Series I (Push and Yield followed by Reach and Pull)

Spinal to Homologous


2. Spinal Yield & Push from the Head → Homologous Yield & Push from the Upper Limbs → Homologous Yield & Push from the Lower Limbs

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Homologous to Homolateral

3. Homologous Yield & Push from the Lower Limbs → Homolateral Yield & Push from the Upper Limb

4. Homolateral Yield & Push from the Upper Limb → Homolateral Yield & Push from the Lower Limb

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Homolateral to Spinal Reach and Pull

5. Homolateral Yield & Push from the Lower Limb → Spinal Reach & Pull from the Head

6. Spinal Reach & Pull from the Head → Spinal Reach & Pull from the Tail

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Spinal Reach and Pull to Homologous Reach and Pull

7. Spinal Reach & Pull from the Tail → Spinal Reach & Pull from the Head

8. Spinal Reach & Pull from the Head → Homologous Reach & Pull from the Upper Limbs

Reprinted with permission from B. Bainbridge Cohen Basic Neurocellular Patterns
Homologous Reach and Pull to Spinal Reach and Pull

9. Homologous Reach & Pull from the Upper Limbs $\rightarrow$ Homologous Reach & Pull from the Lower Limbs

10. Transition to hands and knees: Spinal Reach and Pull from the Head $\rightarrow$ Spinal Reach & Pull from the Tail
Spinal Reach and Pull to Contralateral Reach and Pull

11. Spinal Reach & Pull from the Head → Contralateral Reach & Pull from the Upper Limb

12. Contralateral Reach & Pull from the Upper Limb → Contralateral Reach & Pull from the Lower Limb
Resources

- bodymindcentering.com